

## **In the Claims:**

### **Claim 1 (currently amended):**

1. An information hiding method with reduced fuzziness, which comprises the steps of:  
inputting the information to be embedded into a convolutional encoder and  
generating encoded information whose length is a multiple of the original  
information;  
generating a random number sequence using interleaving encoding for permuting the  
encoded information, the seed of the random numbers being a first key;  
selecting a pixel of a host image using a random number generator as an information  
embedding point of the encoded information, the seed of the random number  
generator being a second key, and  
embedding the encoded information into a B channel of the pixel of the host image;  
further wherein the host image H is an image of  $m \times n$  pixels and the electronic  
signature to be embedded is information W with a size L, both the host image H and  
the embedded information W being expressed as:  
 $H = \{h_{ij} \mid 0 \leq i < m, 0 \leq j < n, h_{ij} \in [0, 255]\}$ , and  
 $W = \{w_i \mid 0 \leq i < L, w_i \in [0, 1]\}$ ; and  
a set  $ASET_{ij} = \{h_{i+1,j}, h_{i-1,j+1}, h_{i,j+1}, h_{i+1,j+1}\}$  being defined for four pixels surrounding and  
to the right of any pixel  $h_{ij}$  in the host image.

### **Claim 2 (previously presented):**

2. The method according to claim 1, wherein the convolutional encoding corrects  
transmission errors or human damages on the encoded information.

### **Claim 3 (original):**

3. The method according to claim 1, wherein the random number sequence is generated by a linear feedback shift register.

Claim 4 (original):

4. The method according to claim 3, wherein the linear feedback shift register comprises a plurality of buffers.

Claim 5 (previously presented):

5. The method according to claim 1 further comprising the following steps for extracting the embedded information:
  - using the second key to compute the embedding positions of the encoded information;
  - using the first key to reconstruct the encoded information and to restore the order before interleaving encoding; and
  - decoding the encoded information using convolutional decoding.

Claim 6 (withdrawn):

- ~~6. The method according to claim 1, wherein the host image H is an image of m×n pixels and the electronic signature to be embedded is information W with a size L, both the host image H and the embedded information W being expressed as:
 
  - ~~—  $H = \{h_{ij} \in \{0, \dots, 255\}; 0 \leq i \leq m-1, 0 \leq j \leq n-1, h_{ij} \in [0, 255]\}$ , and~~
  - ~~—  $W = \{w_i \in \{0, 1\}; 0 \leq i \leq L-1, w_i \in [0, 1]\}$ ; and~~
  - ~~— a set  $ASET_{ij} = \{h_{i+1,j}, h_{i-1,j+1}, h_{i,j+1}, h_{i+1,j+1}\}$  being defined for four pixels surrounding and to the right of any pixel  $h_{ij}$  in the host image.~~~~

Claim 7 (currently amended):

7. The method according to claim 6 1, wherein a temporary variable is defined to be  $h' = (h_{i-1,j-1} + h_{i,j-1} + h_{i-1,j+1} + h_{i,j+1} + h_{i+1,j-1} + h_{i,j+1} + h_{i+1,j+1})/8$ .

Claim 8 (withdrawn):

8. ~~The method according to claim 6 further comprising the step of adjusting the values of  $h_{i,j}$  and  $ASETi_{i,j}$  according to:~~

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while(((h'  $h_{i,j}$ ;  $\emptyset$ t) and (w=0)) or (( $h_{i,j}$   $h'_{i,j}$ ;  $\emptyset$ t) and (w=1))) do
begin
for each  $h'_{i,j}$   $ASETi_{i,j}$  do
 $h'_{i,j}$  =  $h'_{i,j}$  - 2w + 1;
 $h_{i,j}$  =  $h_{i,j}$  + 2w - 1;
 $h$  = ( $h_{i-1,j-1}$  +  $h_{i,j-1}$  +  $h_{i-1,j+1}$  +  $h_{i+1,j+1}$  +  $h_{i-1,j}$  +  $h_{i+1,j}$  +  $h_{i,j+1}$  +  $h_{i+1,j+1}$ )/8;
end.
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Claim 9 (original):

9. The method according to claim 5, wherein the hidden information is true if  $h \square h_j$  in the step of using the second key to compute the embedding positions of the encoded information.

Claim 10 (previously presented):

10. The method according to claim 5, wherein the convolutional decoding adopts the Viterbi algorithm.